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| 10/571,066 | 03/08/2006 | David J Chatting | 36-1965 | 2456 |

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| EXAMINER | |
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| CHEN, CHIA WEI A | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/571,066 | CHATTING ET AL. | |
| | Examiner | Art Unit | |
| | CHIA-WEI A. CHEN | 2622 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *08 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 March 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Specification*

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### *Claim Objections*

3. Claims 1, 7-10 and 19-22 are objected to because of the following informalities:

In section b of claim 1, there is an errant period after the word "communications."

The “image processing means” of claims 7-10 and the “image processing step” of claims 19-22 have no antecedent basis in the claims.

4. Appropriate correction is required.

### *Claim Rejections - 35 USC § 101*

5. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO “Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility” (Official Gazette notice of 22 November 2005), Annex IV, reads as follows (see also MPEP 2106):

> Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.
>
> When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and Warmerdam, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).
>
> In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

6. Claim(s) 27 is/are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 27 defines a computer program or suite of programs embodying functional descriptive material (i.e., a computer program or computer executable code). However, the claim does not define a “computer-readable medium or computer-readable memory” and is thus non-statutory for that reason (i.e., “When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized” – Guidelines Annex IV). The scope of the presently claimed invention encompasses products that are not necessarily computer readable, and thus NOT able to impart any functionality of the recited program. The examiner suggests amending the claim(s) to embody the program on “computer-readable medium” or equivalent; assuming the specification does NOT define the

computer readable medium as a "signal", "carrier wave", or "transmission medium" which are deemed non-statutory (refer to "note" below). Any amendment to the claim should be commensurate with its corresponding disclosure.

### *Claim Rejections - 35 USC § 102*

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 2, 7, 8, 9, 11, 13, 14, 19, 20, 21, 23, 27, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Cash (US 5,481,297).

Claim 1, Cash teaches in Fig. 1, a video communications system comprising:

a) video imaging means (camera 14) arranged to produce first video images representative of a first scene;

b) communications means (communication line 14) arranged to send information relating to said first video images and to receive information relating to second video images representative of a second scene, preferably via a network; and

c) a video display means (display 10) arranged to display video images to a user; said system being characterised by further comprising:

d) image generating means (display controller 418, Fig. 4) arranged to generate overlay video images for display by combining respective first and second scenes of

respective first and second video images such that they appear to be overlaid in substantial alignment (see overlaid videos on the displays of Fig. 1, see also col. 4, lines 50-61).

Claim 2, Cash teaches a system according to claim 1, and further comprising:

image processing means (processing filters 208, 212) arranged to process said first video images and/or said second video images according to one or more respective image processing operations (filtering operation), and to output processed versions of the first and/or second video images to the image generating means as input thereto;

wherein said image processing operations are operable to process said video images such that the respective scenes of the first and second video images are separably distinguishable in the overlay image generated by the image generating means (See Fig. 1: displays of first and second scenes are distinguished by the window frames on the display.).

Claim 7. A system according to claim 1, wherein the second video images are not processed by the image processing means (full resolution image from camera can be directly fed into strip memory 220 without undergoing processing by the filters; see Fig. 2), and the image generating means operates to overlay the respective processed first video images onto the received second video images (see displays of Fig. 1: the user can choose which image is overlaid on top of another.).

Claim 8, Cash teaches a system according to claim 1,

wherein the image processing means is further operable to process the first video images twice to produce two processed versions of the first images (see Fig. 2: The system of Cash processes the signal from the camera in at least two ways using one filter [208] or two filters [208 and 212] to produce at least two different versions of the first images);

wherein a first processed version of each image is input to the image generation means as input thereto, and a second processed version of each image is input to the communications means for transmission thereby (different versions are output by the processing section of Fig. 2 and are received by the different nodes. The first processed version of the image can then be displayed by the first node and the second processed version is also transmitted via the communication line 40.).

Claim 9, Cash teaches a system according to claim 8, wherein different image processing operations are applied to the first video images to produce the first processed versions and the second processed versions respectively (a single filter [208] is used to produce the first processed version and two filters [208 and 212] are used to produce the second processed version; see Fig. 2).

Claim 11, Cash teaches a system according to claim 1, wherein the first scene includes the first user's head, and/or the second scene includes a second user's head (users' head and torso; col. 4, line 42).

Claims 13, 14, 19, 20, 21, and 23 are rejected as methods performing the functions of claims 1, 2, 7, 8, 9, and 11, analyzed above.

Claim 27 is rejected as a computer program or suite of programs (see Fig. 1: work station is a computer with video displays, cameras, and display windows, i.e., software, that appear on the video display; col. 4, lines 1-11) arranged such that when executed by a computer or collectively by a plurality of computers it/they cause the computer or computers to perform the method of claim 13, analyzed above.

Claim 28 is rejected as a computer readable storage medium (It is inherent that the work station comprises a storage medium in order to run the software and operating system of the work station disclosed in col. 4, lines 1-11.) storing a computer program or any one or more of a suite of computer programs according to claim 27, analyzed above.

### *Claim Rejections - 35 USC § 103*

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 3, 4, 6, 10, 15, 16, 18, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cash in view of Oliyide (US 5,978,518)

Claim 3, Cash teaches a system according to claim 2, and wherein video images of high quality with high bandwidth requirements or low quality with lower bandwidth requirements are produced (see Fig. 2), but does not expressly teach wherein one of the image processing operations comprises an image contrast enhancement operation.

Oliyide teaches wherein one of the image processing operations comprises an image contrast enhancement operation (unsharp masking operation; col. 2, lines 7-22).

It would have been obvious to a person having ordinary skill in the art to have used the teaching of Oliyide with that of Cash in order to enhance the image presented to a viewer and to provide a means for sharpening the edges of an image without sharpening the noise. (See col. 2, lines 40-42 of Oliyide.)

Claim 4, Cash in view of Oliyide teaches a system according to claim 3, Oliyide teaches wherein the image contrast enhancement operation comprises detecting edges within the input image to produce an edge map (decompose into a high frequency image), applying a threshold operation to the input image to produce a thresholded image (decompose into a low frequency image), and combining the edge map with the thresholded image to produce the processed image (combining the processed resolution images to form a resulting image; col. 2, lines 8-17).

Claim 6, Cash in view of Oliyide teaches a system according to claim 3, Cash teaches wherein:

the first video images are processed to enhance image contrast, and the second video images are processed to increase image capacity; or

the second video images are processed to enhance image contrast, and the first video images are processed to increase image capacity (video images from each node are processed to produce a high quality, full-resolution video as well as a filtered image to decrease resolution and increase image capacity as related to bandwidth; See Fig. 2, col. 7, lines 1-3).

It would have been obvious to use the image enhancement operation of Oliyide with the high quality, full-resolution video of Cash in order to provide a clearer picture to a user.

Claim 10, Cash teaches a system according to claim 9, wherein:

the first processed versions of the first video images are produced by processing the first video images to maintain high image quality, and the second processed versions of the first video images are produced by processing the first video images to increase image capacity; or

the second processed versions of the first video images are produced by processing the first video images to maintain high image quality, and the first processed versions of the first video images are produced by processing the first video images to increase image capacity (video images from each node are processed to produce a

high quality, full-resolution video and a filtered image to decrease resolution and increase image capacity as related to bandwidth; See Fig. 2, col. 7, lines 1-3);

but does not expressly teach wherein images are processed to enhance image contrast.

Oliyide teaches a system to process images to enhance image contrast (col. 2, lines 8-17).

Claims 15, 16, and 22 are rejected as methods of performing the functions of claims 3, 4, and 10, analyzed above.

Claim18, Cash in view of Oliyide teaches a method according to claim 15, Cash further teaches wherein:

the first video images are processed to enhance image capacity, and the second video images are processed to increase image capacity (first video is processed by filtering the image by filters 208 and 212 to reduce the resolution to 1/4 or 1/16 of frame data, thereby increasing image capacity over a given bandwidth; col. 7, lines 1-3); or

the second video images are processed to enhance image capacity, and the first video images are processed to increase image capacity (second video is also processed by filtering the image by filters 208 and 212 to reduce the resolution to 1/4 or 1/16 of frame data, thereby increasing image capacity over a given bandwidth; col. 7, lines 1-3).

11. Claims 5, 17, 25, 26, 29, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cash in view of Cohen-Solal (US 7,206,029).

Claim 5, Cash teaches a system according to claim 2, but does not expressly teach wherein one of the image processing operations comprises processing to render the processed image of increased opacity.

Cohen-Solal teaches a image processing means (processor 120) wherein one of the image processing operations comprises processing to render the processed image of increased opacity (Cohen-Solal teaches rendering one of two video signals overlaid on a display transparent; see col. 7, lines 39-44. That is, one of the video signals has an increased opacity and the other video signal has a decreased opacity.) .

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the transparency of Cohen-Solal with the teaching of Cash in order to prevent the obscuration of the underlying image when two images are overlaid. (See col. 7, lines 39-44 of Cohen-Solal.)

Claim 25, Cash teaches a system according to claim 2, Cohen-Solal teaches wherein the system further comprises quality measurement means for determining a measure of at least one characteristic indicative of image quality for the first video images, the image generating means being responsive to an indication of the measured quality, such that at least one visible characteristic of the overlay images of the first scene is dependent on the image quality of the first video images (the transparency of

the overlaid video image is adjusted based on a characteristic, i.e., a color portion or a texture portion, present in the primary image; see claim 9 and col. 4, lines 34-40 of Cohen-Solal).

Claim 26, Cash in view of Cohen-Solal teaches a system according to claim 25, wherein the degree to which the overlay images relating to the first scene are opaque is dependent on the image quality of the first video images (the transparency of the overlaid video image is adjusted based on a characteristic, i.e., a color portion or a texture portion, present in the primary image; see claim 9 and col. 4, lines 34-40 of Cohen-Solal).

Claims 17, 29, and 30 are rejected as a method performing the functions of claims 5, 25, and 26, analyzed above.

12. Claims 12 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cash in view of Maurer (US 6,272,231).

Claim 12, Cash teaches a system according to claim 1, but does not expressly teach wherein the video imaging means comprises virtual reality processing means, arranged to generate video images of an avatar of the user for use as the first video images.

Maurer teaches in Fig. 1, a system wherein a video imaging means (camera 12) comprises virtual reality processing means (facial animation processor 18), arranged to generate video images of an avatar of the user for use as the first video images (the facial movements of a user are tracked and are used to create an animated facial image on an avatar of a display of a remote user; col. 3, lines 13-30).

It would have been obvious to a person having ordinary skill in the art to have used the teaching of Maurer with that of Cash since both patents are directed to video conferencing techniques, and additionally since Maurer allows the tracking of a person's natural characteristic without any unnatural elements that may interfere or inhibit the persons' natural characteristics. (See abstract of Maurer.)

Claim 24 is rejected as a method for performing the function of claim 12.

***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Shirakawa (US 7,443,447)

Takashima (US 7,277,117)

Bullister (US 5,886,735)

Sukeno (US 2001/0033324)

Andersson (US 5,500,671)

Lafon (US 7,190,388)

***Inquiries***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHIA-WEI A. CHEN whose telephone number is (571)270-1707. The examiner can normally be reached on Monday - Friday, 7:30 - 17:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571) 272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. A. C./
Examiner, Art Unit 2622

/Timothy J Henn/
Primary Examiner, Art Unit 2622